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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,489	03/16/2004	Fernando Oliveira	EMS-07301	3655

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EXAMINER

NGUYEN, THAN VINH

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,489	OLIVEIRA ET AL.	
	Examiner	Art Unit	
	Than Nguyen	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 and 28 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 10-14, 16-19, 22-26 and 29-52 is/are rejected.
- 7) ☒ Claim(s) 3, 6-9, 15, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-52 are pending.
2. The IDS, filed 6/30/04, has been considered.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 29-52 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 29-52 recite, "A computer program product . . ." without any recitation of how the program is technologically embodied. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things". They are neither computer components nor statutory processes, as they are not "acts" being performed. The program as claimed could be embodied as a handwritten description, or even mentally. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See MPEP 2106 subsection II.B.I .

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1,2,4,5,10-14,18,19,22-26,29,30,32,33,38-42,46-50 are rejected under 35

U.S.C. 102(e) as being anticipated by Farmer et al (US 7,007,043).

As to claim 1,22,29,46:

7. Farmer teaches a storage backup system that uses journaling. Farmer teaches the claimed method for providing a backup copy comprising:

receiving a write request (capture write commands; 2/53);

receiving data (3/30-60);

journaling said write request in one of a plurality of journals (track journals; 1/35-40; 2/55-56; 4/24-27); and

updating said primary storage in accordance with the write request (update/write to primary storage; 3/5-15).

As to claim 2,25,26,30,49,50:

8. Farmer teaches receiving partial journals having partial journal entries; merging the partial journal entries in accordance with a predetermined merging time period forming a merged partial journal entry for a particular storage location, said merged partial journal entry reflecting application of data modifications for the particular storage location for the predetermined merging time period (reconstruct a particular point-in-time snapshot from stored logs/journals; 4/40-65).

As to claim 4,23,32,47:

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9. Farmer teaches each partial journal entry includes a time stamp (abstract; 8/45-47).

As to claim 5,24,33,48:

10. Farmer teaches periodically flushing the journals to a primary journal (write to primary journal; 4/30-31).

As to claim 10,38:

11. Farmer teaches the write request is made with respect to a copy of data included on the primary storage (2/53-56; 3/5-10).

As to claim 11,39:

12. Farmer teaches the primary storage is **one of**: a physical device, logical device, virtual device, and a portion of one or more different devices (3/5-60).

As to claim 12-14,40-42:

13. Farmer teaches each time stamp value is obtained using a phase lock loop processing technique and using actual time values (storing time stamp; Abstract; 3/30-35; 5/5/25; 6/57; Claim 1).

As to claim 18:

14. Farmer teaches a system comprising:

a switch including input ports (server/administrator 408; Fig. 4);

a plurality of partial journals (partial log/journals; 1/35-40; 2/55-56; 4/24-27);

a primary journal incorporating portions of the partial journals (merged journal from reconstruction of a particular point-in-time snapshot from stored logs/journals; 4/40-65).

As to claim 19:

15. Farmer teaches a time base (storing journal/log time; abstract; 8/45-47).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 16,17,44,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farmer et al (US 7,007,043).

As to claim 16,17,44,45:

18. Farmer does not specifically disclose the journal and updating are simultaneous and each journal entry includes a validity status. It is well-known in the art to perform functions simultaneously to get the fastest performance and data would be synchronized. One of ordinary skills in the art would readily recognize that simultaneously storing the journal and updating the primary storage would ensure the data in the journal and primary storage are synchronized, ensuring the most accurate and point-in-time snapshot. One skilled in the art would also recognize the importance of having a status of the journal and updating operation to indicate whether it has been completed. Thus, it would have been obvious to one of ordinary skills to performing the journaling and updating simultaneously and use status indicators so that the journal and primary storage are completed and contain the most accurate and synchronized point-in-time snapshot.

Allowable Subject Matter

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19. Claims 3,6-9,15,20,21,31,34-37,43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form **including ALL of the limitations of the base claim and any intervening claims**. Applicant must also overcome any other rejection/objection corresponding to these claims.

20. As to claim 3, 31 the prior art does not further suggest the primary journal includes a first portion for partial journal entries and a second portion for merged partial journal entries.

21. As to claim 6,34 the prior art does not further suggest contents of each partial journal are included in a primary journal when each partial journal is filled in accordance with a predetermined capacity level.

22. Claim 7,35 is also allowable for incorporating the limitation of claim 6/34, and further limitations.

23. As to claim 8,36 the prior art does not further teach each partial journal is associated with an input port in a switch and includes journal and includes journal entries for all write requests received on that input port.

24. Claim 9,37 is also allowable for incorporating the limitation of claim 8/36, and further limitations.

25. As to claim 15,43 the prior art does not further teach each partial journal is associated with an input port and all write requests from that input port are journaled in the corresponding partial journal and wherein each merged partial journal entry includes an indicator indicating the validity of journal entries received from each input port in accordance with a time stamp value associated with the merged partial journal entry.

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26. As to claims 20,21 the prior art does not teach each partial journal entry includes a data value of a location after/prior to applying an update of a write request corresponding to each partial journal entry.

27. Claims 27-28,51-52 have allowable subject matter.

28. As to claim 27-28,51-52 the prior art does not teach the claimed method of creating a point-in-time copy of a primary storage comprising: (emphasis in bold)

receiving journal entries corresponding to write requests formed using a plurality of partial journals, each partial journal being associated with a portion of write requests, **said journal entries being ordered in accordance with a time value associated with each of said write request, each of said journal entries including a value for a corresponding portion of primary storage before performing a write request;** creating a map of pointers to the primary storage wherein each pointer is associated with a particular location identifier; and **performing, for each journal entries including a location identifier and a data value prior to performing a write request: determining a corresponding map pointer for each location identifier included in a journal entry; and if said corresponding map pointer points to a value in the primary storage, then adjusting the map pointer to point to said data value in each journal entry.**

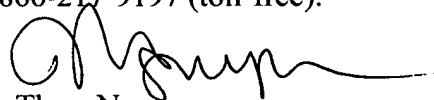
Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen
Primary Examiner
Art Unit 2187